Examining Quality Elements in a Higher Education Fully Online Doctoral Program: Doctoral Students' Perceptions

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The purpose of this descriptive qualitative study was to examine the quality elements of online learning in a regional doctoral program. Utilizing the six quality dimensions of Hathaway's (2009) theory of online learning quality as a framework, the study investigated instructor-learner, learner-learner, learner-content, leaner-interface, learner-instructional strategies, and social presence in order to explore the frequency and importance of these elements. The study's findings were in alignment with the review of literature. Course design, instructor's facilitation, and student interaction were factors impacting learning outcomes (Eom, Wen, & Ashill, 2006). Faculty participation was found to dramatically improve the performance and satisfaction of students (Arbaugh & Rau, 2007; Hrastinski, 2009). Subsequently, three conclusions emerged from the study. Conclusion one revealed the importance of doctoral students and faculty interaction. Conclusion two revealed that instructor to learner interaction is intentional. Conclusion three revealed that instructor to learner interaction was an important factor in increasing doctoral student performance in the online learning environment.

State University is a regional university located in Northeast Texas with an enrollment in excess of 13,000, of which 40 percent are graduate students. The Online Doctoral Program in the Educational Leadership Department of the State University was implemented to ensure that all students have access to a quality online learning doctoral program. For years, State University enjoyed a state-wide acclaim for a quality educational administration program (Jefferson, personal communication, August 2012). In an effort to continue the commitment to quality education, State University explored ways to meet the challenges of a changing world with an educational opportunity that seemed economically out of reach for most students (Sabine, personal communication, June 11, 2013).

The Educational Leadership doctoral online program of State University joined Academic Partnerships (AP) in an effort to provide a greater educational opportunity and to increase graduate student enrollment, especially the doctoral student enrollment. The first AP cohort of 24 doctoral students began taking courses in March 2012. Each semester thereafter, a new cohort of doctoral students was enrolled in the Educational Leadership Doctoral Program. In the 2012 Summer Semester, 57 AP students were enrolled, 66 AP students were enrolled in the 2013 Fall Semester, and 64 AP students were enrolled in the 2013 Spring Semester (Sabine personal communication, June 11, 2013).

However, with the increasing swell in the doctoral student enrollment, educational quality became an issue. Student support, instructor to student ratio, and faculty training (Trinity, personal communication, May 21, 2013) emerged as areas of challenge. The future of the doctoral online program was facing a dilemma. The sheer volume of numbers created an unmanageable situation with educational quality at risk (Sabine, personal communication, June 18, 2013). Mashaw (2012) noted, "Students in a fast-moving, technological-oriented society demand efficiency in terms of learning effectiveness and time" (p. 189). State University was confronted with the quandary of rapid expansion of the online doctoral program vs. an approach of regrouping with measured steps to ensure a quality education. In their research report, Allen and Seaman (2013) echoed the same concern for academic leaders to grapple with the quality of learning outcomes and faculty issues.

Many published research studies have examined factors that affect the effectiveness of online learning in higher education. For example, Eom, Wen, and Ashill (2006) found that course design, instructor's facilitation, and student interaction were factors impacting the learning outcome. Student participation was also found to dramatically improve the performance and satisfaction of students (Arbaugh & Rau, 2007; Hrastinski, 2009). The researchers used Hathaway's (2009) theory of online learning quality, which includes six quality dimensions (instructor-learner, learner-learner, learner-content, leaner-interface, learner-instructional strategies, and social presence) as a framework for this research study.

Purpose of the Study

The purpose of this descriptive case study research was to examine the elements of online learning quality. The quality of the online learning environment and experiences was determined by quality elements such as: (a) Instructor-Learner, (b) Learner-Learner, (c) Instructor-Learner Instructional Strategies, (d) Learner-Content, and Learner-Support.

Research Questions

The following research questions guided this descriptive study: (a) What do doctoral students report about the quality of online learning environment and experiences: (b) What do doctoral students report about the importance of these quality elements for their learning? (c) What quality elements would you add to the online learning environment and experiences that were not present? Specifically, this research inquiry was to determine the extent to which these learning technologies aided in the teaching and learning of the course content and increased student-to student, student-to-teacher, and student-to-content interactions.

Significance of the Study

The original online doctoral program was implemented in the Fall Semester in 2011 (Livingston, personal communication, May 31, 2013). The impetus for this educational endeavor was in response to students' request to introduce flexibility into their face-to-face program (Livingston, personal communication, June 18, 2013). This motive aligns with the finding of Allen and Seaman (2011), who found that 80 percent of their study respondents viewed the online education program as superior to the face-to-face program due to the flexibility for scheduling of courses. Once implemented with nineteen students (Livingston, personal communications, June11, 2013), it became evident that the online doctoral program was preferred by the students. Thus, the face-to-face program was retired from the Educational Administration Doctoral program and the online format was embraced for doctoral studies.

      Allen and Seaman's (2013) research involving ten years of tracking online education in the United States revealed the view that online education is just as good as face-to-face instruction is decidedly mixed. During the period of 2003 through 2009, their data reflected a small decrease in the proportion of academic leaders reporting the learning outcomes for online education were inferior to those of comparable face-to-face courses. Furthermore, they found that from 2011-2012 an increase in the proportion of academic leaders who had a positive view of the quality of the learning outcomes for online courses as compared to comparable face-to face courses. However, there remains a sizable minority that continues to see the online option as inferior (Allen & Seaman, 2013). Thus, the significance of this study is to add to this body of research on online instruction to determine students and faculty perceptions of the effectiveness of online instruction in State University's Online Doctoral Program.

Literature Review on Effective Online Learning Quality in Doctoral Programs

The quality of online learning programs has been evolving as more and more colleges are offering online coursework. Current literature (Jung, 2010; McNaught, 2001; Phipps & Merisotis, 2000; Sun, Tsai, Finger, Chen, & Yeh, 2006) suggests that there are several dimensions of quality e-learning programs. Although each set of research categorizes the dimension slightly differently, the overall dimensions of online learning quality are described as how the learner interacts with the instructor, other learners, the course content, the course interface, and the instructional strategies. Each of these dimensions will be discussed in more detail.

Learner-Instructor

The interaction between the learner and the instructor can affect the student's perception on the quality of the course. The aspects of this relationship that have been found to be most important

are instructor support (Dykman & Davis, 2008b), instructor attitude (Wang, 2006) and the quality of the interaction (Sebastinanelli, Swift, &Tamimi, 2015).

      Instructor support. One of the most important interactions between the learner and their instructor is for the instructor to provide support for student learning by providing students with prompt, meaningful and consistent feedback. This type of feedback was found to build trust between students and their instructor (Dykman & Davis, 2008b). While students may have unrealistic expectations about the timeline of providing feedback, this can be combated by establishing communication with students in regards to a reasonable turnaround time (Sebastinanelli, et al. 2015)

      The Sloan-C framework. Wang (2006) used the Sloan Consortium Framework to apply the frameworks' five pillars of quality to the online education environment. One of the pillars is faculty satisfaction. Wang found during his study that faculty who found online instruction personally and professionally rewarding were determined to be more effective in their teaching practices. Sun et al. (2007) had a similar conclusion stating that instructor attitudes affect their student's performances. The more positive the instructor felt about using a computer to deliver their content, the more effective students perceived the course. The researchers also assumed that an instructor's timely response times could increase student's performances, but this result was not found to be significant in their study.

      Instructor interaction and quality. Sebastinanelli, et al. (2015) found that positive student and instructor interaction had a significant impact on student learning and student satisfaction in their course. However, a significant result was not determined for perceived quality for the course. Nevertheless, instructors can use the diversity of their students to encourage frequent interaction and engagement in the discussion forms and learner-learner interaction were found to have a small, but significant impact on perceived quality for an e-learning course.

Learner-Learner

Although students do not get to interact face-to-face in an online course, student interaction is still possible in online courses. The importance of learner-learner interaction and the perceived quality of the course was linked in Peltier, Schibrowsky, and Drago's (2007) research, although Sun et al. (2007) did not find a significant increase in this dimension.

      Peltier, Schibrowsky, and Drago Quality Factors. Student interactions in online programs typically occur in a discussion form setting. These interactions have been shown to be important in any online course. Peltier, Schibrowsky, and Drago (2007) found that student interactions were especially important in professional programs. Peltier et al. (2017) found this was due to students having outside professional experience to share in the discussions and less faculty direction was needed to direct the conversations. Sebastinanelli et al. (2015) go further and state that some of the perceived quality of the course is dependent on the caliber of students enrolled in the course. Sweeney and Ingram (2001) also found that online discussions often are more meaningful and productive than in a classroom setting since students are allowed time to critically think through their responses.

Learner-Content

When students enroll in an online education program, they are expected to learn the same content as they would in a face-to-face classroom. Course content has been found to be the greatest

predictor of perceived learning, student satisfaction, and quality of the course in regards to the learner. Sebastinanelli et al. (2015) determined that content for an online MBA was the strongest predictor of quality even when compared with learner-learner and learner-instructor interactions. Their study for quality used a Structural Equation Modeling Approach to compare factors that had the potential to effect quality of the course.

   Structural Equation Modeling Approach. Sebastinanelli et al. (2015) compared course content, course structure, rigor, learner-instructor interaction, learner-learner interaction and learner support to determine which factor had the greatest impact on learning and quality of the course. Although the learner interactions with other learners and their instructors played a part in determination of quality, course content was concluded to have the greatest influence over quality. The conclusion of the significant impact of the course materials was also reached in Peltier et al. (2007) using a complex SEM model. The importance of content indicates that instructors must take great care to choose content that students will find relevant, useful, and add value to their chosen profession.

   Flow model. Student engagement with the course material can also be used to evaluate the quality of an online course. Csikszentmihalyi's Flow Model is used to determine how engaged learners are with the content of the course. Edel-Malizia and Brautigam (2014) proposed that the model can measure the students' socio/emotional, cogitative, and behavioral engagement with the course material. Although this theory has yet to be tested, student engagement with the course material has been shown to be a significant dimension of quality in face-to-face courses (Fredricks, Blumenfeld, & Paris, 2004).

Learner-Interface

   The interface is the online software that allows students to access the program learning content. The interface should be intuitive enough to engage novice learners but also be adaptive and take into account the many different ways students learn. Flexibility and usability (Ardito et al., 2006; Dringus & Cohen, 2005) are the keys to these learning software interfaces since they must allow for the platform to be used for many different types of courses in an online program.

   Usability. The International Organization for Standardization (2000) defines usability as "the capability of the software product to be understood, learned, used and attractive to the user, when used under specified conditions" (Abran, Khelifi, Suryn, & Seffah, 2003, p. 324). The usability of the interface to the learner has a role in how well the content of the course is understood by the user, the learner in the case of online education. If the software interface does not make a natural connection with the learner or if the software is too slow or frustrating, learners spend more time learning the interface instead of the content of the lesson or give up on the lesson entirely (Ardito et al., 2006). The interface then would prove to be counterproductive and can overload students. This means that the interface must be clear and distraction free to increase the student's retention of the content.

   SUE. The System Usability Evaluation (SUE) method describes a way to evaluate the quality of the learner-interface interaction. SUE evaluates both the platform and the educational modules separately with both inspections by experts and users. The user testing is cost effective, but is difficult to apply the results to many different platforms. Ardito et al. (2006) found that it would be applicable to provide specific guidelines of e-learning systems.

   Usability heuristics. Dringus and Cohen (2005) developed an adaptable usability heuristic checklist for online courses based on Nielsen (1994)'s summary of specific guidelines for evaluating online courses. The checklist has thirteen categories, which are as follows: (1) visibility; (2) functionality; (3) aesthetics; (4) feedback and help; (5) error prevention; (6)

memorability; (7) course management; (8) interactivity; (9) flexibility; (10) consistency; (11) efficiency; (12) reducing redundancy; and (13) accessibility. These categories were also included in studies by Squires and Preece (1999); Shneiderman (2003); and Wong, Nguyen, Chang, and Jayaratna (2003).

   Evaluation method. Although the SUE expert and user method of evaluation proposed by Ardito et al. (2006) is not new, they do include new guidelines for completing the inspections. Once user studies have been completed using a checklist similar to Dringus and Cohen (2005), guidelines for the experts can be associated with this criterion in mind and a set of Abstract Tasks can be identified. These Abstract Tasks are what drives the expert's inspection of the interface. Adrito et al. (2006) has shown that this method of inspection is far superior to a traditional evaluation.

   Learner dimension. The learner's attitude toward the technology they must use to complete their online programs also plays a role in the success of their program. Sun et al. (2006) found three significant aspects of learners' perceived quality based upon their approach to technology. The significant characteristics that were found were a positive learner attitude toward computers and high internet self-efficacy positively influenced a learner's satisfaction with their e-learning program. Conversely, if a student had any anxiety about learning on a computer, their perceived e-learner satisfaction of their program decreased.

Learner-Instructional Strategies

In an online classroom, the best instructional strategies promote a learner-centered environment. Li (2015) suggested a School to Work (STW) model, which promotes the strategy of using formative assessment to ensure the quality of the course. Sun et al. (2007) also noted that multiple assessments during the course were also effective.

   School to work model. An increasing number of nontraditional students are enrolling in online programs. These students are seeking a more career-based educational environment. Li (2015) suggested the best way to accommodate nontraditional students' learning goals is to continually monitor the learner's development throughout the course. By using this formative assessment strategy, it was found that there was an increased feeling of a classroom community based on mutual engagement and creates a "social fabric of learning" (p. 212).

   Formative assessment. Li (2015) defined formative assessment as the process of instructors taking "advantage of feedback information they collect to modify their teaching plan, methods, and process in order to improve their teaching proficiency" (p. 209). The feedback to students in turn can adjust their learning and study habits to complete their educational goal. In this way, the instructor can also personalize their students learning materials and increase student engagement. Instructors can directly influence a student's future achievement by having a clear idea about their students' interests and goals. Li suggests the instruction for the course to have textbook learning, game-based learning, group work, role playing, simulation and other meaningful activities.

   Environmental dimension. An instructional strategy Sun et al. (2007) found important in perceived quality was diversity in assessment during the course. It was determined that diversified assessment methods encouraged students to give their best effort on each new assessment and had a more genuine interest in each activity. When instructors used this method, the learners' perceived learning and overall effectiveness of the instruction increased.

Quality Assessment in Online Courses

Although most research on the quality of online programs has not been conducted on graduate programs, a consensus on the dimensions of quality programs has been achieved. While each research study categorized the dimensions slightly differently, the main dimensions remain the interaction of the learner with their instructors, other learners, the course content, the interface and the instructional strategies. Even though the literature has found all dimensions to be significant to the quality of the program, some have been found to be more important than others.

Research Design and Methodology

This research utilized a descriptive qualitative case study design in an effort to understand social phenomena by employing descriptive and interpretive methodology. Case study designs develop an in-depth analysis of a single or multiple cases (Creswell, 1998). Specifically, "the case study method allows investigators to retain the holistic and meaningful characteristics of real-life events-such as individual life cycles, organizational and managerial processes, neighborhood change, international relations, and the maturation of industries" (Yin, 2003, p. 2).

Criteria for Selecting Participants

A purposive sampling technique was used to select the participants for this study. The criteria for selection were that the participants had to be graduate students who had been consistently enrolled in doctoral classes from Fall 2012, Spring 2013, Fall 2013, and Spring 2014. Names and email addresses were obtained from the Educational Leadership Department doctoral students' database. These students were invited via email to participate in the study. Adobe Connect software was utilized to present participants with semi-structured, open-ended questions. Clicking on the Adobe Connect link demonstrated student agreement to participate. Student responses were recorded in Adobe Connect software. Researchers transcribed students' responses.

Qualitative Data Collection

Qualitative data for this descriptive case study were collected using the responses to the three open-ended questions in an online, focus group setting using the Adobe Connect software program. The questions were: (a) What do doctoral students report about the quality of online learning environment and experiences: (b) What do doctoral students report about the importance of these quality elements for their learning? (c.) What quality elements would you add to the online learning environment and experiences that were not present?
Participant responses in the online focus group and, open-ended question responses taken from the questionnaire distributed to these students through the online Qualtrics software program. This qualitative data enabled the researchers to solicit deeper meanings about the perceptions of the quality of the online doctoral program at State University-Commerce.

Qualitative Data Analyses

Yin (2003) maintains that qualitative data analysis consists of "examining, categorizing, tabulating, testing, or otherwise recombining both quantitative and qualitative evidence to address

the initial propositions of a study" (p. 109). He contends that any of these strategies can be used in practicing five specific techniques for analyzing case studies: pattern matching, explanation building, time-series analysis, logic models, and cross-case synthesis (Yin, 2003, pp.109, 116-137). The researchers used pattern matching and explanation building during the data analysis process. Data collection and analysis took place simultaneously.

Discussion of Qualitative Findings

The purpose of this qualitative inquiry was to explore doctoral students/ perceptions of the quality elements of the online learning environment and experiences. Specifically, we wanted to know: (a) What do doctoral students report about the quality of online learning environment and experiences: (b) What do doctoral students report about the importance of these quality elements for their learning? (c.) What quality elements would you add to the online learning environment and experiences that were not present? There were seven students who participated in the focus group. The following sections describe the findings from the faculty participants.

The Quality of Online Learning Environment and Experiences: Student Perceptions

All participants contributed responses that underscored an overwhelming importance of the quality of online learning environment and experiences. Participant 6 noted "I have enjoyed the online courses. Teachers have provided feedback and been very helpful." Participant 2 *concured " it enabled us to form groups with other students in order to complete projects, papers, etcetera [sic]."* The importance of the learning experience was offered by Participant 8:

> *"I learned best when the teacher was present in the course such as chats, discussion board. Some teachers even held google handouts and Adobe Connect. Teacher presence in the classroom was helpful."*

However, Participant 7 stated *"I did not get feedback from all of my professors. Perhaps one or two gave me feedback. I was not pleased with teacher presence in my courses."* Participant 4 voiced *"I wish more of the teachers had provided feedback on my assignments. Some did, but most did not."*
Participant 3 noted:

> *"Some of the teachers provided feedback. Some of them did not. I learned best when the teacher was present in the course such as chats, discussion board. Some teachers even held google handouts and Adobe Connect. Teacher presence in the classroom was helpful."*

The importance of Quality Elements for Learning: Student Perceptions

An overall review of the data revealed that most students were pleased with feedback from teachers, teacher presence, student-centered teachers, and the cohort model. For example, Participants 1 used these words to express their feelings: *"The Cohort model was great. The support, help with assignments helped me be more successful. We had good teachers. Students like to complain but most of our teachers were good."* Participant 4 added:

> *"I think online teaching is effective. I really enjoyed some of the teachers. They were student-centered. We received feedback and helpful resources in each module from most of the teachers."*

Participant 2 noted:

> *"The quality elements that I felt, were really good included the discussion threads since they drew upon participation from everyone with occasional input from the professor. We established oftentimes Skype groups whereby we would meet by ourselves on a weekly basis in order to discuss what we needed to do in order to complete whatever assignments that might have been assigned for that particular week."*

Participant 3 remarked that *"I learned best when the teacher was present in the course such as chats and discussion board. Some teachers even held google handouts and Adobe Connect."*

Lastly, Participant (5) added *"I thought the discussion board was very helpful. Some teachers provided great feedback on the discussion board and on the assignments. I am pleased with my courses. I have learned a lot."*

Quality Elements Need for the Online Learning Environment and Experiences: Student Perceptions

Overall students were pleased with the online environment and experiences. No student expressed a desire to return to the face to face environment. Participant 1 stated *"Online learning was just as effective as f2f for me because of teacher presence in the classroom."* Participant 4 added *"I think online teaching is effective."* Participant 4 concurred :

> *"I wish more of the teachers had provided feedback on my assignments. Some did, but most did not. I think online teaching is effective. I really enjoyed some of the teachers. They were student-centered. We received feedback and helpful resources in each module from most of the teachers."*

Participant 5 noted *"some teachers provided great feedback on the discussion board and on the assignments. I am pleased with my courses. I have learned a lot."* Participant 6 concurred *"I have enjoyed the online courses. Teachers have provided feedback and been very helpful."*

However, participates did identify needs to make the online environment and experiences more effective. Participant 2 noted *"there needed to be more timely feedback from the professors, clarification in what it was that we had to do in an assignment, and professor monitoring instead of teaching assistants."* Participant 7 added *" I did not get feedback from all of my professors. Perhaps one or two gave me feedback. I was not pleased with teacher*

In summary, each of the students (100%) who responded to the open-ended statements perceived these learning technologies used in the online learning environment were important and of value to increase the social presence of the teacher and students in the classes. In addition, the student indicated that the use of technologies such as streaming videos, responding to the case students and simulations, and Skype or Google+, had the potential to assist with the retention and mastery of the content as well as create an interactive and exciting learning environment.

Conclusions

The researchers drew several conclusions for a quality online program from the qualitative findings of this study. Conclusion one revealed the importance of doctoral students and faculty interaction. All of the students agreed that instructor to learner interaction was an important factor in the online learning environment. This is facilitated in a variety of ways, especially timely response to concerns. This conclusion is supported by Swann's (2003) contention that student achievement is

related to the frequency of interaction with instructors, clear prompt feedback, and multiple opportunities to learn and demonstrate learning.

Conclusion two revealed that instructor to learner interaction is intentional. From the qualitative data, all 7 (100%) faculty members overwhelmingly agreed that the use of online learning technologies were important and of value to increase instructor to learner interaction. This conclusion is supported by Mashaw (2012), who refers to instructor to learner interaction as teacher social presence. Chen (2007) advances the notion that engaging students in meaningful learning activities increases the likelihood of learning.

Conclusion three revealed that instructor to learner interaction was an important factor in the online learning environment. This is evidence by over all (100%) of students expressing agreement. Two students indicated that they miss the meaningful conversations from face-to-face interactions. Students do benefit from individual assessment and continual feedback toward their progress (Swan, 2003).

Implications/Recommendations for Practice and Future Research

Lives of students are now influenced by technology, and all of its implications, on a daily basis. In 2010, under direction of President Obama, the United States Department of Education and the Office of Educational Technology developed the National Education Technology Plan, *Transforming American Education: Learning Powered by Technology*, to identify goals for technology implementation. The model was designed to assist all levels of education to connect what is taught in education with how it is taught. The model was intended to identify areas for research and development to meet the ongoing challenges posed by changes in technology.

This study has examined students' perceptions of the effectiveness of online instruction in State University Doctoral Online Program is aligned with *Transforming American Education: Learning Powered by Technology* because the findings and conclusions of this study contribute to the body of research for a quality online instructional program.

The findings of this research provide meaningful data that suggest implications for the elements of online learning quality within the online doctoral program. It is critical to expand the understanding of online learning quality, for Eom, Wen, and Ashill (2006) found that course design, instructor's facilitation, and student interaction were factors impacting the learning outcome. This current study confirmed these findings. Three implications/recommendations for future study emerge that are noteworthy.

The first implication emphasizes the importance of having tools in place for the purpose of determining the strategies that encourage student/faculty engagement and interaction. Allen and Seaman (2013) surveyed more than 2,800 colleges and universities for the purpose of determining the opinions of academic officers regarding online education. The study reported that academic leaders expressed substantial improvement with regard to the quality of the online learning. This is based on the belief held by academic leaders that good tools are in place to assess the online instructional program. Duncan and Cator (2010) contend that the infrastructure of learning must be adjusted so that educators and students can access each other or resources at any time. If this done correctly, productivity increases for all stakeholders (Duncan & Cator, 2010). Chen (2007) noted that while student engagement and student/faculty interaction requires more time from the instructor, as well as the learner, the learning occurs that is truly meaningful.

The second implication is the periodic evaluation of the online program for quality. Given the changes in technology hardware and software, program evaluation serves to maintain program

focus and emphasize student outcomes. Assessment information should be regularly gathered and evaluated to help educators improve upon their efforts (National Education Technology Plan, 2010). Duncan and Cator (2010) advance the notion that if our education programs are more productive, it will create students who are more productive and capable. Glenn (2008) observes that universities are now feeling the challenge of educating students with skills and knowledge of technology so that individuals can compete globally. Moloney and Oakley (2010) reported that online enrollment is expected to grow 20% for the following few years. With these issues in mind, addressing what quality online educational programs are, and are not, is of prime importance. Moloney and Oakley strongly contend that given the educated and competitive nature of international market, online education programs must be evaluated for quality, just as traditional schools are.

Thus, we recommend that our online program continue to be evaluated using both formative and summative assessments. One method would be to structure a time and section in each course for students to evaluate the effectiveness of the use of technologies and pedagogical skills to engage them in the teaching and learning environment and result in a successful experience. Another method of evaluation could be during the time the student exits from the program. A few structured-open-ended questions could be designed to obtain students' perceptions of program effectiveness related to content, teacher and student presence, engagement, and learning outcomes.

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